

EXECUTIVE SUMMARY [NON-TECHNICAL ABSTRACT FOR PUBLIC INFORMATION OR PROGRAM PROMOTION]:

State **in layman's terms** the application's broad, long-term objectives and specific aims, making reference to the potential public benefits of the project relevant to California.

Several issues exist with the current influenza vaccine design and production system. Vaccine design is performed several months in advance and therefore scientists need to predict which influenza strains will be in circulation. Once the influenza strains are selected, producing the vaccine is laborious and costly. Once the vaccine is on the market, people need to be immunized annually with new vaccines because of the introduction of new influenza strains which infect humans.

To overcome some of these issues, we propose to develop a new liposomal influenza vaccine which focuses on the T-cell response to one of the major influenza proteins, hemagglutinin. Liposomes will be used for the delivery since they will help stimulate a stronger immune response. We will test the potency of the newly designed liposomal vaccine in mice. The liposomal protein vaccine will be easier to manufacture than the traditional vaccine because it will not require growing up the virus in chicken eggs. The protein can be made in bacteria, purified and incorporated into the liposomes. Developing new vaccine strategies for influenza that are effective and easy to manufacture will meet a significant public health need.